ABSTRACT OF THE DISCLOSURE

Various designs of a spiral accumulator apparatus are disclosed for controlling the flow of articles. The accumulator may have an infeed conveyor driven in a first direction to convey articles therealong in the first direction along a first path that is at least partially curved, and an outfeed conveyor driven in an opposite direction to convey articles therealong in the opposite direction along a second path that is at least partially curved. The infeed and outfeed conveyors may be spaced apart and generally parallel along at least a portion of the first and second paths so as to define a space therebetween. A movable transport member may be disposed generally across and movable along the space, and an article transfer member may be carried by the transport member and operably disposed between the infeed and outfeed conveyors to transfer articles between the infeed conveyor and the outfeed conveyor. A transport member mover may be connected to the transport member. A differential drive mechanism may be located at a fixed position spaced from the transport member, the differential drive mechanism including an output portion for contacting and moving the transport member mover when a relative speed difference exists between the infeed and outfeed conveyors thereby causing the transport member to travel in the direction of the faster of the infeed and outfeed conveyors. The differential drive mechanism may include a plurality of gears, or it may include condition responsive devices and related motors and controls, for driving the transport member mover.